BOCHVAR, D.A.; BAGATUR'YANTS, A.A.

Electronic structure of sydnone and of some of its nitrogenous analogs. Zhur.fiz.khim. 39 no.7:1631-1635 Jl '65.

(MIRA 18:8)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

KHRULEV, Mikhail Valer'yanovich. Prinimal uchastiye TKACHENKO, G.VV, kand. khim. nauk; BAGATUR'YANTS, K.G., red.; ROMM, R.S., red.

[Polyvinyl chloride] Polivinilkhlorid. Moskva, Izd-vo "Khimiia," 1964. 262 p. (MIRA 17:8)

BAGATYREV, M.F.

Acute appendicitis and pregnancy. Akush. gin. no.3:67-68 May-June 1953. (CIML 25:1)

1. Of Khankaysk Rayon Hospital (Head Physician -- V. Ya. Popovich), Maritime Kray, and Galich Rayon Hospital (Head Physician -- I. N. Shumilin), Kostroma Oblast.

BAGATYUK, A.P., inzh-elektrik

Experience in the use of an electronic tension regulator for cardboard and paper webs. Bum. prom. 33 no.5:21-22 My '58. (MIRA 11:6)

1.Zhidachevskiy kartonno-bumazhnyy kombinat.
(Papermaking machinery) (Electronic control)

ARSHINSKIY, V.M.; BAGAUTINOV, G.A.; BESPALOV, M.V.; GASPAROVICH, P.I.; GOLOMIDOV, I.N.; GOLUBOV, G.B.; GRIN, L.T.; ZEL'SKIY, S.A.; IL'INYKH, A.F.; KOZIN, V.Z.; KRYUKOV, V.P.; KULAKOV, S.N.; LUKAS, V.A.; MINEYEV, V.A.; PETROV, Yu.S.; PIRUSHKO, M.G.; PROKOF'YEV, Ye.V.; REBETS, B.A.; STARTSEV, N.V.; TROP, A.Ye., prof.; KHRAMOV, V.A.; ABRAMOV, V.I., otv. red.; PROZOROVSKAYA, V.L., tekhn. red.; BOLDYREVA, Z.A., tekhn. red.

[Handbook on electric equipment for mines] Spravochnik gornogo elektrotekhnika. Pod obshchei red. A.E.Tropa. Moskva, Gosgortekhizdat, 1962. 400 p. (MIRA 16:5)
(Electricity in mining)

TSOY, S.; BAGAUTDINOV, A.G.

Mine ventilation without sealing the ventilation shaft mouth. Izv. AN Kazakh. SSR. Ser. gor dela no.2:109-112 '58. (MIRA 12:10)

(Mine ventilation)

BAGAUTDINOV, A.Z.

New data on V.A.Obruchev. Izv. Vost.-Sib. otd. Geog. ob-va SSSR 61:64-65 '63. (MIRA 17:3)

1. GRIGOR'EV, P. M., BAGAUTDINOV, B. G.

2. USSR (600)

4. Chkalov Province - Horses

7. Sol'-Iletsk State Breeding Center for Saddle Horses in Chkalov Province, Konevodstvo 23, no. 2, 1953.

9. Monthly List of Russian Accessions, Library of Congress, May 1953. Unclassified.

BAGAUTDINOV, G.; GAGAYEV, B.; [illegible]AV, B.

Konstantin Petrovich Persidskii; on his 60th birthday. Zav. vys. ucheb. zav.; mat. no.6:172-173 '63 (MIRA 17:8)

BAGAUTDINOV, G. N.

A Contribution to the Solution of the CAUCHY Problem for Equations Consisting of First-Order Partial Derivatives p. 18

TRANSACTIONS OF THE 2ND REPUBLICAN CONFERENCE ON MATHEMATICS AND MECHANICS (TRUDY VTOROY RESPUBLIKANSKOY KONFERENTSII PO MATEMATIKE I MEKHANIKE), 184 pages, published by the Publishing House of the AS KAZAKH SSR, ALMA-ATA, USSR, 1962

BAGAUTDINOV, G.N.; ZHAUTYKOV, O.A.

Konstantin Petrovich Persidskii, 1903 - ; on his 60th birthday.
Usp. mat. nauk 18 no.6:241 '63. (MIRA 17:3)

BAGAUTDINOVA, Kh.G.

Interpretation of the geometry of an affinely connected space in a conformal space. Izv.vys.ucheb.zav.; mat. no.2:13-22 '62. (MIRA 15:8)

1. Kazanskiy gosudarstvennyy pedagogicheskiy institut.
(Spaces, Generalized) (Geometry, Differential)

BAGAUTDINOVA, Kh.G. (Magnitogorsk)

Construction of polarized normalization of conformal space.
Izv. vys. ucheb. zav.; mat. no.2:3-7 '64. (MIRA 17:8)

MOKRONOSOV, A.T.; BAGAUTDINOVA, R.I.

Effect of photochemical induction on the dark fixation of $C^{14}O_2$ by potato leaves. Dokl. AN SSSR 160 no.1:227-229 Ja '65. (MIRA 18:2)

1. Ural'skiy gosudarstvennyy universitet im. A.M. Gor'kogo. Submitted May 23, 1964.

S/153/61/004/002/002/003
E073/E535

AUTHORS: Vozdvizhenskiy, G.S., Sayfullin, R. S. and Bagautdinova, S. G.

TITLE: On Determining the Thickness of Bright Nickel Coatings by Means of the Jet-Volume Method

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy SSSR, Khimiya i khimicheskaya tekhnologiya, 1961, Vol.4, No.2, pp. 258-260

TEXT: The British No.1224 1945 standard specification and the German DIN 50951 1953 standard specification refer to determination of the thickness of plating by means of a jet method. The 1953 version of the British No.1224 specification no longer contains a description of the jet method for determining the thickness of bright nickel coatings. In the Soviet specification ГОСТ (GOST) 3003 of 1958 it is recommended to utilise a coefficient of 1.4 when determining the thickness of bright coatings produced from baths with additions of 2;6 (2;7)naphthalene disulphonic acid, since it is assumed that such deposits dissolve 1.4 times faster than dull deposits. Practical experience in

Card 1/6

the "Santekhpribor" Works obtained by D. Ye. Chasov and M. G. Vayner has shown that the real thickness of the coatings differs appreciably from the thickness measured by the method recommended by this Soviet specification. The aim of this work was to elucidate the main causes of disagreement between individual methods of measurement and to arrive at a more accurate determination of the thickness of nickel coatings. The results are already in practical use. The nickel was deposited on a mechanically polished copper p l a t e from an electrolyte of the following composition (g/l: $NiSO_4 \cdot 7H_2O$ - 250, NaCl - 10, H_3BO_3 - 30, NaF - 4, 2;6-2:7 naphthalene disulphonic acid - 4, formalin (40%) - 0.8 for a pH of the electrolyte of 5.4-5.7. The cathode was located at an equal distance (17.5 cm) from the two anodes of electrolytic nickel placed i n a sack made of belting fabric. Mixing was by compressed air. The local thickness of the coatings was determined on deposits which were removed from the base using an ИКВ (IKV) optimeter. On most of the surfaces on which measurements were then made by the jet method, the thickness was 85 ± 5% of the average value calculated from the

weight increase of the metal. The deposits, which were removed from the base by a chemical method, were glued onto the edges of perspex for the purpose of determining their thickness. Determination of the thickness was carried out in accordance with the specification GOST 3003-58. The brightness of the deposits was measured by means of a brightness meter with a selenium photocell using a relative scale, according to which the brightness of a silver mirror is 100 units. The hardness of the deposits was determined by means of the instrument ПМТ-3 (PMT-3) using a load of 20 g. The results of thickness measurements for various plating conditions and also the properties of the obtained deposits are entered in Table 1 for current densities of 2 and 4 A/dm^2, respectively, giving the temperature of the electrolyte, °C, the brightness, %, the hardness kg/mm^2 and the apparent thickness, μ. The real thickness of the deposits in all cases was 17 ± 1 μ. In this series of tests the investigated spot was cleaned four times with filter paper. The influence of the number of rubbings of the spot (to remove the sludge) on the thickness determination was s t u d i e d and the results are given in Table 2. The deposits obtained from this bath with various

quantities of b r i g h t e n i n g agents (0.5, 1, 4 g/l) had an equal apparent thickness. According to the specification GOST 3003-58, a correction coefficient of 1.4 has to be applied when determining the thickness of bright nickel coatings. The given results indicate that application of this coefficient shows good agreement between the determined thickness and the real thickness only for deposits obtained under certain plating conditions. Of great importance also is the number of rubbings of the investigated specimen. Platings produced by means of other b r i g h t e n i n g agents will obviously have a different speed of dissolution under the jet of the reagent and, consequently, it will be necessary to provide other standards for calculation and the same applies for platings obtained from the investigated electrolyte under different plating conditions. The following conclusions are arrived at:

1. Determination by means of the jet-volume method of the thickness of bright nickel coatings obtained from baths with brightening additions must be related to a c t u a l conditions of producing the coatings.

2. The determination of the thickness of bright coatings according

to GOST 3003-58 is applicable only to deposits produced from the investigated bath, using a current density of 2 A/dm^2 and a temperature of 40°C, provided that the sludge is removed no more than once from the section under investigation. Acknowledgments are expressed to the head of the NIIKhIMMASh Laboratory, M. I. Zilberfarb for his comments on the results. There are 2 tables and 6 references: 1 Soviet and 5 non-Soviet.

ASSOCIATION: Kafedra neorganicheskoy khimii, Kazanskiy khimiko-tekhnologicheskiy institut im. S. M. Kirova (Inorganic Chemistry Chair, Kazan Chemico-technology Institute imeni S. M. Kirov)

SUBMITTED: September 2, 1959

Table 1

Плотность тока, а/дм²	2			4		
Температура электролита, °С	20	40	60	20	40	60
Блеск, %	30—40	60—70	2—3	30—50	60—70	60—70
Твердость, кг/мм²	530	570	550	530	570	570
Кажущаяся толщина, мк	12,7	13,6	19,0	12,5	13,0	17,2

Table 2

Plating conditions		Apparent thickness for the following number of rubbings					Difference in % between extreme values
Current Density, A/dm^2	Temperature, °C	0	1	2	3	4	
2	20	15.5	15.1	13.9	13.4	12.7	18
	40	20.3	16.2	15.7	14.5	13.6	33
	60	30.4	24.1	22.9	20.3	19.0	34
4	20	14.2	13.9	13.0	12.5	12.5	9
	40	21.1	14.8	14.2	13.6	13.0	35
	60	27.4	21.4	19.7	19.1	17.2	38

1.1800

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S/081/61/000/011/020/040
B105/B203

AUTHORS: Sayfullin, R. S., Bagautdinova, S. G.

TITLE: Tank for blank coppering

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 11, 1961, 347, abstract 11K180 (Tr. Kazansk. khim.-tekhnol. in-ta, 1959, vyp. 26, 151-160)

TEXT: An electrolyte of the following composition is recommended for blank coppering (in g/l): $CuSO_4 \cdot 5H_2O$ 200-250, H_2SO_4 60-90, thiourea 0.01-0.03, molasses 0.8; temperature 15-20°C; D_c 3-8 a/dm^2 (under stirring). Blank nickel (2-3μ) served as a sublayer. The strength of coverings was 260-310 kg/mm^3. No distinct relation was observed between the brilliance of coverings and the cathode potential. The admixture of thiourea shifts the potential by 50-60 mv; the admixture of H_2SO_4 by 300-500 mv. [Abstracter's note: Complete translation.]

Card 1/1

VOZDVIZHENSKIY, G.S.; SAYFULLIN, R.S.; BAGAUTDINOVA, S.G.

Determination of the tickness of lustrous nickel coatings obtained by the flow method. Izv. vys. ucheb. zav.; khim. i khim. tekh. 4 no. 2:258-260 '61. (MIRA 14:5)

1. Kazanskiy khimiko-tekhnologicheskiy institut im. S.M. Kirova. Kafedra neorganicheskoy khimii.
(Nickel plating)

SAYFULLIN, R.S., kand. tekhn. nauk; BAGAUTDINOVA, S.G., inzh.

Black chromium plating. Mashinostroenie no.5:67 S-O '64
(MIRA 18:2)

L 60843-65 EWT(m)/EWP(i)/EWP(t)/EWP(z)/EWP(b) IJP(c) JD/EW

ACCESSION NR: AR5012747 UR/0276/65/000/003/B076/B076
621.357.7:669.55'248

SOURCE: Ref. zh. Tekhnologiya mashinostroyeniya. Svodnyy tom, Abs. 3B569 22 8

AUTHOR: Bagautdinova, S. G. 44

TITLE: Some problems of the structure and mechanism of the formation of bright platings of zinc-nickel alloy 44 16

CITED SOURCE: Sb. Nekotoryye vopr. teorii i praktiki ispol'z. v gal'vanotekhn. neyadovit. elektrolitov. Kazan', 1964, 76-77

TOPIC TAGS: electroplating, nickel plating, zinc plating, metal phase system

TRANSLATION: The results of investigations of the electrolytic conditions of the deposition of Zn-Ni alloys on their phase structure are given. It was found that stirring the electrolyte exerts a considerable effect on the structure of the forming alloys. Thus, when there is no stirring, a growth of α- and β-phases, as well as traces of γ-phase, is observed on the cathode at a temperature of 20C and current of 0.5 - 2 a/dm^2. With stirring, only β-phase forms on the cathode. Increasing the temperature to 40C results in the formation of a monophase deposit of α-phase on the cathode. With increase in current density from 2 to 3 a/dm^2 a growth

Card 1/2

L 60843-65
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of β- and γ-phases begins on the cathode. With joint deposition of Zn and Ni, a marked retardation of the deposition of Ni and an acceleration of the deposition of Zn is observed as compared with the deposition of the pure metals. Yu. Polukarov.

SUB CODE: MM ENCL: 00

Card 2/2

BAGAUTINOV, G.A., inzh.

Most advantageous digging regime for multibucket, pile-supported dredges. Izv. vys. ucheb. zav.; gor. zhur. 5 no.10:151-154 '62.
(MIRA 15:11)

1. Sverdlovskiy gornyy institut imeni Vakhrusheva. Rekomendovana kafedroy avtomatizatsii proizvodstvennykh protsessov.
(Dredging)

PETROV, I.P., dotsent; BAGAUTINOV, G.A., inzh.

Efficient electric drive systems for the bucket mechanism and head winches of a chain and bucket dredge. Izv. vys. ucheb. zav.; gor. zhur. 7 no.3:139-147 '64

1. Sverdlovskiy gornyy institut imeni Vakhrusheva. Rekomendovana kafedroy avtomatizatsii proizvodstvennykh protsessov.

BAGAUTINOV, G.A., inzh.

Standardizing the consumption of electric power by dredges. Izv. vys.ucheb.zav.; gor.zhur. 5 no.9:97-104 '62. (MIRA 15:11)

1. Sverdlovskiy gornyy institut imeni V.V.Vakhrusheva. Rekomendovana kafedroy avtomatizatsii proizvodstvennykh protsessov.
(Dredging machinery) (Electric power)

BAGAUTINOV, G.A., inzh.

Methodology of calculating the static forces of the bucket mechanism of multibucket dredges. Izv. vys. ucheb. zav.; gor. zhur. 6 no.3: 101-104 '63. (MIRA 16:10)

1. Sverdlovskiy gornyy institut imeni V.V.Vakhrusheva.
Rekomendovana kafedroy avtomatizatsii proizvodstvennykh protsessov.

BAGAUTINOV, G.A., inzh.

Selecting the engine power for the drive of a multibucketed dredge trommels. Izv. vys. ucheb. zav.; gor. zhur. 6 no.9: 139-146 '63. (MIRA 17:1)

1. Sverdlovskiy gornyy institut imeni Vakhrusheva. Rekomendovana kafedroy avtomatizatsii proizvodstvennykh protsessov.

BAGAUTINOV, G.A., kand.tekhn.nauk; KOSULIN, G.A., inzh.

Control of the parameters of scooping by pile driving dredges. Izv. vys.ucheb.zav.;gor.zhur. 7 no.7:149-152 '64.

(MIRA 17:10)

1. Sverdlovskiy gornyy institut imeni Vakhrusheva. Rekomendovana kafedroy avtomatizatsii proizvodstvennykh protsessov Sverdlovskogo gornogo instituta.

BAGAUTINOV, G.A., dotsent; KOSULIN, G.A., inzh.

Systems of the automatic control of bearing pile drag complexes for mining. Izv.vys.ucheb.zav. gor.zhur. 7 no.12:128-133 '64. (MIRA 18:2)

1. Sverdlovskiy gornyy institut imeni V.V.Vakhrusheva. Rekomendovana kafedroy avtomatizatsii proizvodstvennykh protsessov.

BAGAUTINOV, G.N.

24721. BAGAUTINOV, G.N. Ob Ustoychivosti Resheniya Differentsial'nogo Uravneniya s Chastnymi Proizvodnymi Pervogo Poryadka. Uchen. Azpicki Kazakh. Gos. Un-ta Im. Kirova, T. XII, 1949, S 50-80

SO: Letopis' No. 33, 1949

GOLOVIN, V.A., inzh.; BAGAUTDINOV, R.R., inzh.

Air-blast switches with simplified drives. Elek. sta. 36 no.12: 61-63 D '65. (MIRA 18:12)

L 25016-65 EWT(1)/EWG(v)/EEC(t) Pe-5/Pae-2 GW/MLK

ACCESSION NR: AT4049984 S/0000/64/000/000/0054/0057

AUTHOR: Bugayenko, L.; Bugayenko, O.I.; Koval', I.K.; Morozhenko, A.V. 29

TITLE: Brightness distribution in the marginal zone of Mars 19

SOURCE: AN UkrSSR. Glavnaya astronomicheskaya observatoriya. Fizika Luny* i planet (Physics of the moon and planets). Kiev, Naukova dumka, 1964, 54-57

TOPIC TAGS: light scattering, Mars opposition, brightness distribution, Martian atmosphere, light absorption, turbulent vibration, photoelectric observation

ABSTRACT: The purpose of this work was to determine the optical characteristics of the Martian atmosphere by a study of brightness as a function of the angle of incident light. To obtain this information, a study of the marginal zone is imperative, but photographic methods are found to be deficient for this purpose. The method used involved a photoelectric sensor, coupled with a very small diaphragm opening subtending only 0".35. The device was placed at the Cassegrain focus of a 70-cm reflecting telescope. Photomultipliers were used, with filters covering a spectral range of 3550 - 9000 A. During the Mars opposition of Feb. 4, 1963, the conditions were perfect and 40 to 50 diameter transits were made for each light filter, with the zenith distance never exceeding 35°. The effective amplitude of

Card 1/3

turbulent image vibration was only 0".4. The authors found the true brightness distribution along the diameter of Mars, which requires correction for washout and image vibration, in the following way. An integral equation was set up by writing:

$$F(x) = \frac{1}{A}\int_{-\infty}^{+\infty} S(x-\xi)\cdot f(\xi)d\xi \qquad (1)$$

where F(x) and $f(\xi)$ are, respectively, the observed and true brightness distribution along the diameter of Mars. The kernel, $S(x-\xi)$, is the brightness distribution for a finite, "normally" vibrating point light source. This can be determined from the expression

$$S(x-\xi) = A\cdot\int_{-\infty}^{+\infty} V\ R_d - (/x-\xi/ - y)^2 \cdot e^{-y^2/2\sigma^2}\, dy \qquad (2)$$

Here, A is the normalization constant, R_d is the diaphragm diameter and is the amplitude of image vibration. The true brightness distribution was determined by first solving expression (2) for the kernel S, and then solving the integral equation (1) by an iterative

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ACCESSION NR: AT4049984

method which converged rapidly. Results of brightness determination for λ = 4200 - 6000 A are given in a table. They point to the prevalence of scattering in the visible region. Results for λ = 3550 - 4200 A are discussed quantitatively without giving the details in table form. The conclusion is drawn that the Martian atmosphere has significant true absorption at around 3550 A. Orig. art. has: 2 tables and 6 formulas.

ASSOCIATION: None

SUBMITTED: 07May64 ENCL: 00 SUB CODE: AA

NO REF SOV: 002 OTHER: 000

Card 3/3

BAGAYEV, A.M.; MAKHUKOV, N.G.

Controlling laminations in casings by means of ultrasonics. Izv. vys. ucheb. zav.; neft' i gaz 4 no.11:99-101 '61. (MIRA 17:2)

1. Groznenskiy neftyanoy institut.

22285
S/152/61/000/004/008/009
B126/B219

24.1900 2209

AUTHORS: Bagayev, A. M., Makhukov, N. G., Fisenko, N. I., Mkrtichan, A. A.

TITLE: Defectoscopy of tubes by means of a УЗД-7Н (UZD-7N) flaw detector

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Neft' i gaz, no. 4, 1961, 103-107

TEXT: The authors conducted the elaboration of a method of defectoscopy in wide seamless pipes by means of the ultrasonic flaw detector УЗД-7Н (UZD-7N). This appliance permits examining with flat transducers (plain transducer) to a minimum depth of 7 mm in steel at a frequency of 2.5 Mc/sec and of 22 mm at a frequency of 0.8 Mc/sec. Pipes with 12-mm walls cannot be examined by the method with a plain transducer as the interval between the wave amplitudes would be too small; it is, however, possible to examine them by a double transducer system at 2.5 Mc/sec. In this method, the beam of ultrasonic waves is directed through a water stratum to the surface of the pipe by means of one transducer - the

optimum angle is 11-12° - whilst the second transducer receives the waves reflected from the inner surface of the pipe. The transducers are applied along the pipe, the distance between their centers must be 45 mm when the water stratum is 30 mm thick. When the ultrasonic waves strike a flaw in the pipe wall, the reflected waves either do not reach the transducer or the wave amplitude is lower. The authors also made experiments with hot-rolled steel, from 4 to 13 mm thick, and for every thickness they determined the distance between the transducers at which the wave amplitude was the highest. This ratio was used to draw up a standard probing scale. The use of a stratum of water (liquid) or of a paste with an acoustic resistance near that of steel between the transducers and the pipe is absolutely necessary if the flaw detection should be reliable. Through this measure, the transducers are also less exposed to wear. In order to establish this stratum the authors adapted a lathe which was equipped with a special trough supplied with water from the main. This method has been tested at the Tsentral'nyy remontno-mechanicheskiy zavod Upravleniya neftedobyvayushchey i gazovoy promyshlennosti Checheno-Ingushskogo ekonomicheskogo administrativnogo rayona (Central Works for Repair and Mechanics of the Administration of Petroleum Hauling

Defectoscopy of tubes... 2228
S/152/61/000/004/008/009
B126/B219

and Gas Industry of the Checheno-Ingushskiy Economic and Administrative rayon). There are 4 figures and 3 Soviet-bloc references.

ASSOCIATION: Groznenskiy neftyanoy institut (Groznyy Petroleum Institute)

SUBMITTED: January 6, 1961

Card 3/3

VODZINSKIY, Yu.V.; BAGAYEV, A.N.

Polarographic analysis of furfurols. Trudy Kom.anal.khim. 13: 340-347 '63. (MIRA 16:5)

1. Tsentral'nyy nauchno-issledovatel'skiy i proyektnyy institut lesokhimicheskoy promyshlennosti, Gor'kiy.
(Furaldehyde) (Polarography)

BAGAYEV, A.N.; VOBZINSKIY, Yu.V.

Polarographic determining of hydroxymethyl furfurole. Sbor. trud. TSNILKHI no.15:113-118 '63. (MIRA 17:11)

BAGAYEV, A.N.

Distillation of wood tar and its products. Gidroliz. i lesokhim. prom. 17 no.2:8-9 '64. (MIRA 17:4)

1. TSentral'nyy nauchno-issledovatel'skiy lesokhimicheskiy institut.

BAGAYEV, A.N.

Effect of temperature on the limiting diffusion current for polarographically active substances. Gidroliz. i lesokhim.prom. 15 no.2:20-22 '62. (MIRA 18:3)

1. TSentral'nyy nauchno-issledovatel'skiy lesokhimicheskiy institut.

BAGAYEV, A.N.; VODZINSKIY, Yu.V.; PYRYAKOVA, A.M.

Investigating the distillation of wood tar and its products. Gidroliz. i lesokhim.prom. 18 no.4:9-11 '65.

(MIRA 18:6)

1. TSentral'nyy nauchno-issledovatel'skiy i proyektnyy institut lesokhimicheskoy promyshelnnosti.

BAGAYEV, Boris Fedorovich, dots.; CHUDINOVA, Izida Mikhaylovna; KOPTSOVA, V., red.

[Siberian Heavy Machinery Plant of the Order of the Red Banner of Labor] Ordenonosnyi "Sibtiazhmash." Krasnoiarsk, Krasnoiarskoe knizhnoe izd-vo, 1964. 85 p. (MIRA 18:9)

BAGAYEV, K.I.; AKSENOV, G.A.

For a reorganization and modernization of equipment and techniques in the furniture industry. Der.prom. 10 no.10:5-7 O '61. (MIRA 14:9)

1. Gosudarstvennyy institut po proyektirovaniyu predpriyatiy derevoobrabatyvayushchey promyshlennosti.
(Furniture industry)

BAGAYEV, K.Ya., uchitel'

Box for boserving the flow of blood in the leg of the frog.
Biol. v shkole no.4:93-94 Jl-Ag '59. (MIRA 12:11)

1.Rozhkinskaya srednyaya shkola Malmyzhskogo rayona Kirovskoy oblasti.
(Biological apparatus and supplies)

BAGAYEV, K.Ya., uchitel'

Making paper pots. Biol. v shkole no.3:79 My-Je '60.
(MIRA 13:7)

1. Rozhkinskaya srednyaya shkola, Malmyzhskogo rayona, Kirovskoy oblasti.
(Paper work)

VOLODIN, N.S.; BAGAYEV, I.S.; PENKINA, Ye.S.; DURNOVO, I.G.; KAPTANENKO, A.Ya.; LUK'YANOVA, G.N.; KOLESNIKOV, V.A.

Use of centralized vacuum evaporation cooling of a zinc electrolyte. TSvet. met. 38 no.6:33-39 Je '65.

(MIRA 18:10)

BAGAYEV, Leonid Kuz'mich; ZAONEGIN, Vladimir Nikolayevich; SUROVIKIN, Vladislav Dmitriyevich; KONYUSHENKO, I.A., red.; KARYAKINA, M.S., tekhn.red.

[Oxygen diving equipment; visual aids for training in shallow diving] Kislorodnyi vodolaznyi skafandr; nagliadnoe uchebnoe posobie dlia obucheniia legkovodolaznomu delu. Moskva, Izd-vo DOSAAF, 1959. 24 p. (MIRA 12:11)
(Diving, Submarine--Equipment and supplies)

BAGAYEV, M.I., kand. tekhn. nauk

Analytical determination of the optimal conditions of tractor work. Trakt. i sel'khozmash. 33 no.7:13-14 Jl '63.
(MIRA 16:11)

1. Tyumenskiy sel'skokhozyaystvennyy institut.

PEVZNER, M.I.; SAMNIKOVA, N.P.; BAGAYEV, M.S.; CHUVAKIN, S.I.

Concentration in heavy media of Darasun deposit ores. TSvet.met. 38 no.7:9-12 Jl '65. (MIRA 18:8)

SANTYLOV, A.I.; BAGAYEV, P.P.

Assembly of the elements of the main building and of the auxiliary structures of the State Regional Electric Power Plant. Energ.-stroi. no.24:44-56 '61. (MIRA 15:4)

1. Nachal'nik Tekhnicheskogo otdela tresta "Sevzapenergomontazh" (for Santylov). 2. Starshiy proizvoditel' rabot montazhnogo uchastka tresta "Sevzapenergomontazh" (for Bagayev).
(Precast concrete construction)
(Narva region--Electric power plants--Design and construction)

BAGAYEV, S.I.

Some technical and economic problems in reconstructing railroad transport. Zhel.dor.transp.37 no.4:8-15 Ap '56. (MLRA 9:7)

1.Zamestitel' ministra putey soobshcheniya.
(Railroad engineering)

BAGAYEV, S.I.

Electrification of the railroads is a most improtant task for capital construction in 1957. Elek. i tepl. tiaga no.4:7-12 Ap '57. (MLRA 10:6)

1. Zamestitel' Ministra putey soobshcheniya SSSR.
(Railroads--Electrification)

BAGAYEV, S.I.

Railroad engineering at the Brussels World' Fair. Zhel. dor. transp. 40 no. 7:79-87 Jl '58. (MIRA 11:7)
(Brussels--Railroad engineering--Exhibitions)

BAGAYEV, S.I.

Railroad stations in Brussels. Zhel. dor. transp. 40 no.12:81-83 D '58. (MIRA 12:3)
(Brussels--Railroads--Stations)

BAGAYEV, S.I.

New railroad construction, lowering its costs and improving its quality. Zhel. dor. transp. 41 no.2:15-21 F '59.
(MIRA 12:3)

1.Zamestitel' ministra putey soobshcheniya.
(Railroads--Construction)

ACC NR: AP7002426 SOURCE CODE: UR/0051/66/021/006/0768/0769

AUTHOR: Bagayev, S. N.; Troitskiy, Yu. V.; Troshin, B. I.

ORG: none

TITLE: Polarization and frequency characteristics of ring lasers with triangular resonators

SOURCE: Optika i spektroskopiya, v. 21, no. 6, 1966, 768-769

TOPIC TAGS: laser, gas laser, ring gas laser, gas laser polarization, gas laser frequency spectrum, ~~laser~~ frequency ~~spectrum~~ characteristic

ABSTRACT: The polarization and frequency characteristics of a triangular He-Ne laser arrangement were experimentally investigated along lines described earlier by Doyle and White (Appl. Phys. Letters. 5, 1964, 193). The arrangement had a perimeter of 363 cm which was formed by three multilayer dielectric mirrors (the first two flat and the other spherical). Two discharge tubes, 4 mm in diameter, were filled with a 1:5 He-Ne mixture at a pressure of 1.8 mm Hg and operated on the 1.153 μ wavelength. The mode positions were observed by means of an arrangement consisting of a polarization prism, a photomultiplier, and an SCh-9 spectrum analyzer. Beats were observed on the 39-, 43-, and 82-Mc frequencies, the peak intensity of the latter being independent of the

Card 1/2 UDC: 621.375.9:535

ACC NR: AP7002426

turning of the prism around its axis. The peak values of the 39- and 43-Mc beats reached their maxima when the polarization prism was at an angle of 45° to the polarization planes of the system. These peaks disappeared periodically with every 90° turn of the prism. By inserting a birefringent plate (quartz or mica) into the resonator, the difference between the modes could be changed within wide limits. The arrangement is considered convenient for use in studying mode interaction, since Kerr cells, compensators, etc., can be employed to effect a smooth change of the mode difference between zero and its maximum.

Orig. art. has: 3 figures.

SUB CODE: 20/ SUBM DATE: 27Dec65/ OTH REF: 001/ ATD PRESS: 5112

Card 2/2

BAGAYEV, S.N.

Characteristics of flowering and fruit bearing of the spindle tree (Evonymus verrucosa Scop). Dokl. AN SSSR 103 no.3:511-512 Jl'55.
(Spindle tree) (MLRA 8:11)

BAGAYEV, S.N.

Flowering of birches. Priroda 52 no.6:127 '63. (MIRA 16:6)

1. Kostromskaya lesnaya opytnaya stantsiya.
(Birch) (Plants, Flowering of)

L 53578-65 EWA(k)/FBD/EWG(r)/EWT(1)/EWT(m)/EPF(c)/EEC(k)-2/EPF(n)-2/EPR/EEC(t)/T/EWP(t)/EEC(b)-2/EWP(k)/EWP(b)/EWA(m)-2/EWA(h) Pm-4/Pr-4/Po-4/Pf-4/Pe-4/Ps-4 Pab/Pi-4/Pu-4/Pl-4 UR/0386/65/001/004/0021/0024
SCTB/IJP(c) WG/JD

AUTHOR: Bagayev, S. N.; Kuznetsov, V. S.; Troitskiy, Yu. V.; Troshin, B. I.

TITLE: Spectral characteristics of a traveling-wave gas laser

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 1, no. 4, 1965, 21-24, and insert facing p. 7

TOPIC TAGS: gas laser, traveling wave laser, neon helium laser, multimode resonator

ABSTRACT: Nonuniform broadening of a spectral line occurs when waves of various frequencies interact with groups of excited atoms at various velocities. This leads to the question of whether excessive longitudinal modes are due to the difference in location of the field nodes and loops in a standing-wave resonator. The author used a gas laser (operating at 6328 Å) with a ring-type resonator in which a traveling wave was generated and propagated in two opposing directions, A (clockwise) and B (counterclockwise). In one direction, the traveling wave was slowed down artificially, which led to a considerable reduction in the spatial periodicity of the light-wave field. The test equipment is shown in Fig. 1 of the Enclosure. The resonator consisted of three mirrors (2, 3, and 4). Mirrors 2 and 3 were 0.2% reflective and mirror 4, 3.7% reflective. The discharge tube (I) was 4 mm in diameter

L 53578-65

ACCESSION NR: AP5014224

and was filled with a mixture of neon and helium in a ratio of 1:5 at a full pressure of 0.5 mm Hg. An additional mirror 5 was used to obtain a traveling wave in one direction and to reflect a portion of the energy in wave B into wave A. As a result of this, the intensity of wave A was 5—7 times higher than the intensity of wave B. The emission spectrum was observed by means of a 10-cm Fabry-Perot etalon 6. The experimental results indicate that elimination of spatial field inhomogeneities in a resonator will result in a sufficiently powerful generation with one or two longitudinal modes. Orig. art. has: 2 figures. [YK]

ASSOCIATION: Institut fiziki poluprovodinikov Sibirskogo otdeleniya Akademii nauk SSSR (Semiconductor Physics Institute, Siberian Branch of the Academy of Sciences, SSSR)

SUBMITTED: 14Apr65 ENCL: 01 SUB CODE: EC

NO REF SOV: 000 OTHER: 001 ATD PRESS: 4015

Card 2/3

L 53570-65

ACCESSION NR: AP5014224

ENCLOSURE: 01

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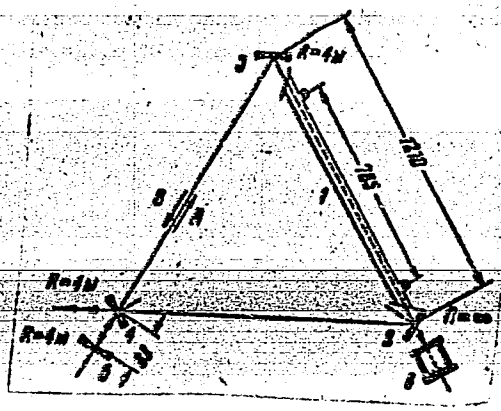

Fig. 1. Test equipment

Card 3/3

BAGAYEV, V.B.

The Distribution of Phosphorous in Organs of Plants in Experiments with Radioactive Isotopes p32. V.M.Klechkovskiy, D.D.Ivanenko, V.B.Bagayev, V.V.Rachinskiy, Moscow Agric Acad im. K.A.Timiryazev, 3 pp., Dok Ak Nauk SSSR, Vol 58, no 1, Oct 47.

In general, results of experiments show that the character of distribution of radioactive phosphorous in the organs of a plant depends upon the condition of the plant and is connected with its diet. In the case of a moderate phosphate diet, when the plant is on the border of evident starvation for phosphorous, the correspondence between the general amount of phosphorous and the contents of radioactive phosphorous introduced into the plant differs sharply in various organs. Submitted by Acad D.N. Pryanishnikov 2 Apr 47.

52T55

BAGAYEV, V. B.

Chem Abs
U.S.R. 25 Jan 54

Botany

The effect of the conditions of phosphate nutrition on the composition of soybean seeds. V. B. Bagaev (K. A. Timiryazev Agr. Acad., Moscow). *Doklady Akad. Nauk S.S.S.R.* 91, 961–4(1953).—When high-phosphate diet is supplied to the soy plant from the beginning to the end of vegetation the seeds are high in fat and relatively low in proteins. Subnormal phosphate diet throughout vegetation gives seeds with high protein and low fat content. Reduction of phosphate supply midway in the vegetative period also gave low fat-high protein seed. Lowering of phosphate supply during flowering with otherwise high-phosphate nutrition gave seeds with supernormal protein and fat content. Under these conditions the relative and the absolute levels of phosphate in unripe seeds are above normal. From the time of bean formation the predominant part of P is in the form of protein-P and sugar phosphates with phytin. In ripe seeds grown on high P diet, the content of protein-P and sugar phosphates (also phytin) is above controls. Brief reduction of phosphate supply during flowering aids the accumulation of protein-P and sugar phosphates, along with phytin, the latter forms being predominant.

G. M. Kosolapoff

BAGAYEV, V.B.

Chemical Abst.
Vol. 48 No. 9
May 10, 1954
Soils and Fertilizers

(1)

Effect of temporary elimination of phosphorus from nutrient medium during flowering period on the growth of soy plants. V. B. Bagaev. *Doklady Akad. Nauk S.S.S.R.* 92, 859–61(1953).—In a nutrient mixt. of KH_2PO_4, $Ca(H_2PO_4)_2$, and Na_2HPO_4 for P supply, and $Ca(NO_3)_2$ and $NaNO_3$ for N supply, soybean plants show an increased yield of 40% or more of the beans and total plant mass if the nutrient mixt. is freed of PO_4 during the flowering stage. If the PO_4 supply is resumed after flowering, the increase is still greater. The effect may be caused by retardation of growth of the reproductive organs which is reflected in increased growth of the vegetative parts of the plant. G. M. Kosolapoff

BAGAYEV, V. B.

Changes in the content of phosphorus compounds in root systems and leaves of the soy in relation to age and conditions of nutrition. V. B. Bagaev. *Doklady Akad. Nauk S.S.S.R.* 94, 145-7(1954).—Soy plants continuously supplied with PO_4^{3-} show a smaller amt. of mineral P than of org. P in their roots; the situation is reversed in the leaves. In plants which were deprived of P supply from the 30th day of age to the end of vegetation, a significant shift of the P content occurs toward the mineral form of P, the effect being most pronounced at the end of the exptl. period. During the intense growth of the plant there is a rise of protein P in the roots.

G. M. Kosolapoff

BAGAYEV, V.B., kand. sel'skokhozyaystvennykh nauk

Effect of phosphorus nutrition on the development and quality of soybeans [with summary in English]. Izv. TSKhA no. 3:193-206 '58.
(Soybean)
(Plants, Effect of phosphorus on)

BAGAYEV, V.B., kand. sel'skokhoz. nauk; SHKEL', S.Ye., kand. sel'skokhoz. nauk

Reaction of corn to the herbicide 2,4-D as related to the conditions of nutrition. Izv. TSKHA no.4:123-133 '63. (MIRA 17:1)

BAGAYEV, V.B., kand. sel'skokhoz. nauk; SHKEL', S.Ye., kand. sel'skokhoz. nauk

Effect of mineral fertilizers on the yield of corn stalks under spraying with 2,4-D. Izv. TSKHA no.1:64-70 '64.
(MIRA 17:4)

1. Kafedra agrokhimii i biokhimii Moskovskoy ordena Lenina sel'skokhozyaystvennoy akademii imeni Timiryazeva.

BAGAYEV, V.I.; MIKHAYLOVSKAYA, F.R.; TIMOFEYEVA, L.V.

Recovery of selenium from strong acids of contact acid section of the Konstantinovka chemical plant. Sbor. mat. po obm. opyt. NIUIF no.12:62-67 '59. (MIRA 16:12)

KAGAN, T.B.; BAGAYEV, V.I., obshchestvennyy red.; TIMOSHEVSKAYA, A.A., tekhn. red.

[Bringing large-scale chemistry to the Donets Basin] Donbassu - bol'shuiu khimiiu. Donetsk, Donetskoe knizhnoe izd-vo, 1963. 92 p. (MIRA 16:12)

1. Predsedatel' Donetskogo oblastnogo komiteta profsoyuza rabochikh neftyanoy i khimicheskoy promyshlennosti (for Bagayev).
(Donets Economic Region--Chemical industries)

KOZMA, I.; BAGAYEV, V.P. [translator]; IL'IN, I.S. [translator]; PETROV, I.A. [translator]; LEPNIKOVA, Ye., red.; DUDNICHENKO, E., mald. red.; NOGINA, N., tekhn. red.

[Agriculture of the Rumanian People's Republic on the way to socialism] Sel'skoe khoziaistvo Rumynskoy Narodnoi Respubliki na puti sotsializma. Moskva, Izd-vo sotsial'no-ekon. lit-ry, 1961. 99 p. (MIRA 14:10)

(Rumania—Agriculture)

BAGAYEV, V.S.; PROSHKO, G.P.; SHOTOV, A.P.

Infrared absorption in heavily doped germanium.
Fiz. tver. tela 4 no.11:3228-3235 N '62. (MIRA 15:12)

1. Fizicheskiy institut imeni P.N. Lebedeva AN SSSR, Moskva.

(Infrared rays)
(Germanium)

VUL, B.M.; SHOTOV, A.P.; BAGAYEV, V.S.

Recombination radiation in degenerate indium antimonide. Fiz. tver.tela 4 no.12:3676-3677 D '62. (MIRA 15:12)

1. Fizicheskiy institut im. P.N.Lebedeva AN SSSR, Moskva.
(Indium antimonide--Electric properties)

L 11280-63 EWA(k)/EWT(1)/FBD/BDS/T-2/3W2/EEC(b)-2/ES(t)-2--AFFTC/ASD/ESD-3/RADC/APGC/AFWL--Pl-4/Po-4--JHB/IJP(C)/WG/K/EH

ACCESSION NR: AP3000510 S/0020/63/150/002/0275/0278

94
86

AUTHOR: Bagayev, V. S.; Basov, N. G. (Corresponding Member, AN SSSR); Bul, B. M. (Corresponding Member, AN SSSR); Kopy*lovskiy, B. D.; Krokhin, O. N.; Markin, E. P.; Khvoshchev, A. N.; Shotov, A. P.

TITLE: Semiconductor quantum oscillator 25 based on the p-n transition 21 in GaAs

SOURCE: AN SSSR Doklady, v. 150, no. 2, 1963, 275-278

TOPIC TAGS: laser, gallium arsenide laser, infrared

ABSTRACT: Coherent emission has been obtained from p-n transitions on GaAs at 77K. The current pulse length was less than 3 μsec and had a repetition frequency of 50 pps. Threshold current density was about 10^4 amp/cm^2. Crystal specimens were prepared by diffusing impurities into strongly doped GaAs to secure a sufficiently flat and optically homogeneous p-n transition with an area of 10^{-3} cm^2. Two surfaces perpendicular to the transition plane were given optical flats and a high reflection coefficient. The width of the narrowed line beyond the emission threshold was 1 to 5 Å. The sharp narrowing of the line testified to the establishment of cavity feedback and commencement of oscillation. The brightness of the crystal, observed through an infrared

Card 1/2

L 11280-63
ACCESSION NR: AP3000510

8

microscope, sharply increased upon crossing the threshold; the bright region of the crystal was 10 to 15 μ wide. Two photos of the bright regions are given, corresponding to injection currents of 10 and 18 a. Increasing current density reduced the width of the emitting regions, apparently because of the stimulated recombination processes occurring in an area of shorter initial diffusion length. Some specimens manifested simultaneous emission from two transitions in parallel planes spaced 30 μ apart. "The authors express their thanks to L. Ya. Krol' for placing the monocrystals of gallium arsenide at their disposal, Yu. N. Kopolev, N. N. Borzunov, L. N. Novak, and Yu. P. Zakharov for their help with the work, and to V. I. Maly*shev and A. M. Leontovich for a wealth of valuable advice." Orig. art. has: 13 formulas and 3 figures.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics Institute, AN SSSR)

SUBMITTED: 11Feb63 DATE ACQ: 12Jun63 ENCL: 00

SUB CODE: PH NO REF SOV: 007 OTHER: 003

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Card 2/2

L 13746-65 EWT(l)/EWG(k)/T Pz-6 IJP(c)/APWD(t)/APETR/AEDC(a)/ASD(a)-5/AFWL/ESD(t) AT

ACCESSION NR: AP4044689 S/0120/64/000/004/0167/0171

AUTHOR: Kopy*lovskiy, B. D.; Bagayev, V. S.; Berozashvili, Yu. N.; Ivanov, V. S.; Shotov, A. P.; Khvoshchev, A. N.

TITLE: Electronic equipment for the investigation of recombination emission in semiconductors

SOURCE: Pribory* i tekhnika eksperimenta, no. 4, 1964, 167-171

TOPIC TAGS: emission, recombination emission, semiconductor recombination emission, p n junction, carrier injection, pulsed carrier injection

ABSTRACT: The equipment described in this article for the generation and investigation of recombination emission in semiconductors is based on the generation of coherent recombination emission by pulsed carrier injections through p-n junctions. This method ensures negative temperature conditions in degenerated semiconductors, while obtaining high current density and avoiding heating of the junction. The injections were accomplished by means of a high-power pulse oscillator which generated pulses of a duration of 1—5 μsec with a smooth current

Card 1/2

L 13746-65
ACCESSION NR: AP4044689

regulation of 0.5 to 400 amp. The recombination radiation light pulses were registered by a photoelectric multiplier, amplified by a wideband amplifier, and applied to the output of a synchronous pulse detector which (in those cases when the reference and the emission pulses coincided in time) converted the radiation signal into d-c voltage. An infrared spectrometer was used to investigate the recombination emission spectra which were registered by a system which took into account the pulsed nature of the signals. Orig. art. has: 9 figures and 2 formulas.

ASSOCIATION: Fizicheskiy institut AN SSSR (Physics Institute, AN SSSR)

SUBMITTED: 17Aug63 ATD PRESS: 3131 ENCL: 00

SUB CODE: EC, SS NO REF SOV: 005 OTHER: 003

Card 2/2

ACCESSION NR: AP4028461 S/0181/64/006/004/1235/1238

AUTHOR: Bagayev, V. S.; Berozashvili, Yu. N.; Vul, B. M.; Zavaritskaya, E. I.; Shotov, A. P.

TITLE: Recombination radiation mechanism in gallium arsenide

SOURCE: Fizika tverdogo tela, v. 6, no. 4, 1964, 1235-1238

TOPIC TAGS: laser, semiconductor laser, recombination radiation, injection laser, gallium arsenide laser, radiative recombination, radiative transition, interband transition, p n junction

ABSTRACT: The mechanism responsible for recombination radiation of GaAs injection lasers has been experimentally investigated by analyzing its spontaneous and stimulated emission spectra. The p-n junctions were prepared by diffusing zinc into GaAs with a Te concentration of 10^{17} to 2×10^{18} cm^{-3}. The carrier concentration in the n-region corresponded to a state of degeneracy. Visual observation of emission through an infrared microscope showed that radiation is emitted from the p-region, which extends for several microns. It was found

Card 1/2

ACCESSION NR: AP4028461

that line width and the maximum $h\nu_{max}$ in the spontaneous emission spectrum vary with impurity concentration and temperature. As the impurity content was increased, $h\nu_{max}$ was displaced toward greater energies. However, even for $N \simeq 10^{17}$ cm^{-3}, $h\nu_{max}$ was 0.03 ev smaller than the width of the forbidden band of pure GaAs. At this value the difference between $h\nu_{max}$ and the energy of the forbidden band cannot be explained by a change in its width as a result of doping. Experimental data indicate that at 4.2 to 77 K the temperature dependence of recombination radiation intensity is weak, while at 300 K the intensity decreases sharply. This may be associated with filling of acceptor levels by electrons from the valence band. No broadening of the spontaneous line was observed when the injection current was increased. This shows that the spectral width is determined by the final states of the electrons due to radiative transitions. The results obtained can be best explained by radiative transitions of electrons from the conduction band, which merges with the donor levels, into the impurity acceptor band of zinc atoms.

ASSOCIATION: Fizicheskiy institut P. N. Lebedeva AN SSSR, Moscow (Physics Institute, AN SSSR)

Card 2/2

ACCESSION NR: AP4034919 S/0181/64/006/005/1399/1405

AUTHOR: Bagayev, V. S.; Berozashvili, Yu. N.; Vul, B. M.; Zavaritskaya, E. I.; Keldy*sh, L. V.; Shotov, A. P.

TITLE: Energy spectrum of strongly doped gallium arsenide

SOURCE: Fizika tverdogo tela, v. 6, no. 5, 1964, 1399-1405

TOPIC TAGS: gallium arsenide, recombination radiation, p-n junction, GaAs, GaAs p-n junction, semiconductor, band structure

ABSTRACT: The recombination radiation of gallium arsenide has been investigated at relatively low injection levels of charge carriers. The minority carriers were injected into a p-n junction prepared by diffusing zinc into GaAs with an initial Te concentration between 10^{17} and $2 \cdot 10^{18}$ per cm^3. The area of the p-n junction was of the order of 10^{-3} cm^2. Recombination radiation modulated at a frequency of 9 cps was recorded when thermal heating of the samples was negligible. The recombination radiation spectra of samples

Card 1/2

ACCESSION NR: AP4034919

measured at room temperature are almost identical. At lower temperatures, however, both the position of the maximum and the shape of the spectral lines are affected by the concentration of Te in the samples. At temperatures equal to 78 and 4.2K, the spectral lines spread into the lower energy region and terminate abruptly on the high energy side. Asymmetry of the curves increases as the temperature is decreased from 78 to 4.1K. It also increases with a larger concentration of Te impurity. At a Te concentration $\approx 10^{18}$ per cm^3, the maximum in the recombination spectrum is shifted toward the lower energy region as the injection current is decreased. It is shown that this displacement is caused by additional energy levels ("tail" in the density of states) in the valence band arising as a result of a large concentration of charged impurities distributed in a disorderly fashion.

ASSOCIATION: none

SUBMITTED: 20Nov63 DATE ACQ: 20May64 ENCL: 00

SUB CODE: PH NO REF SOV: 004 OTHER: 008

Card 2/2

KOPYLOVSKIY, B.D.; BAGAYEV, V.S.; BEROZASHVILI, Yu.N.; IVANOV, V.S.; SHOTOV, A.P.; KHVOSHCHEV, A.N.

Electronic apparatus for analyzing recombination radiation in semiconductors. Prib. i tekh. eksp. 9 no.4:167-171 Jl-Ag '64. (MIRA 17:12)

1. Fizicheskiy institut AN SSSR.

L 45793-66 EEC(k)-2/EWT(l)/EWT(m)/T/EWP(t)/ETI/EWP(k) IJP(c) JD/WG
ACC NR: AP6030154 SOURCE CODE: UR/0120/66/000/004/0185/0189

AUTHOR: Bagayev, V. S.; Berozashvili, Yu. N.; Ivanov, V. S.; Kopylovskiy, B. D.; Korolev, Yu. N.

ORG: Institute of Physics AN SSSR, Moscow (Fizicheskiy institut AN SSSR)

TITLE: Some thermal effects in GaAs semiconductor lasers

SOURCE: Pribory i tekhnika eksperimenta, no. 4, 1966, 185-189

TOPIC TAGS: semiconductor laser, solid state laser, laser R and D

ABSTRACT: The results are reported of an investigation of the semiconductor laser heating during pulse injection and of the effect of laser heating on its radiation characteristics. Semiconductor specimens of 0.0008--0.005 cm² area had a diffusion p-n junction and a resonator made by a spallation method; threshold-current density was 2000-4000 amp/cm² at 77K. Current pulses up to 10 μsec were used for excitation. The temperature rise was measured by the shift of generation modes. From this temperature rise, the quantum yield (30%) and efficiency (11 and 20%) of the laser are estimated. They are comparable with the values (21--18% and 8--12%) estimated from the radiated power. To eliminate the semiconductor specimen heating during the injecting pulse, a special transistorized pulse generator was built which developed a current pulse of 150 amp with a rise time of 5×10^{-8} sec. Cases of

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L 45793-66
ACC NR: AP6030154

2

resonator mirror burnout were recorded. "The authors wish to thank B. M. Vul and A. P. Shotov for their valuable advice and discussions." Orig. art. has: 5 figures, 3 formulas, and 1 table. [03]

SUB CODE: 20 / SUBM DATE: 25Jun65 / ORIG REF: 003 / OTH REF: 005/ ATD PRESS: 5085

pb

Card 2/2

L 11389-67 EWT(l)/EWT(m)/EWP(w)/EEC(k)-2 /EWP(t)/ETI IJP(c) JD
ACC NR: AP7000399 SOURCE CODE: UR/0386/66/004/009/0364/0368

AUTHOR: Bagayev, V. S.; Berozashvili, Yu. N.; Keldysh, L. V. 41

ORG: Physics Institute im. P. N. Lebedev, Academy of Sciences SSSR (Fizicheskiy institut Akademii nauk SSSR)

TITLE: Electrooptical effect in GaAs

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 4, no. 9, 1966, 364-368

TOPIC TAGS: gallium arsenide, electrooptic effect, absorption edge, double refraction, dielectric constant, refractive index

ABSTRACT: The authors have investigated the change in the refractive index n in homogeneous semi-insulating GaAs placed in an external electrostatic field, and observed also the shift of the absorption-band edge. To determine the change in the refractive index, monochromatic light modulated at 1 kHz was passed through the GaAs sample. The signal from the light receiver was amplified with a narrow-band amplifier and then fed to an automatic plotter through a synchronous detector. The cryostat with the sample was placed between two polarid films. When no field was applied to the sample and the polaroids were crossed, the recorded signal was practically equal to zero. Application of the field produced birefringence in the sample. The linearly polarized light thus became elliptically polarized after passing through the sample. The measurements yielded the dependence of the phase difference δ^0 on the intensity E of the external

Card 1/2

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ACC NR: AP7000399

electric fields for different energies ħω. The plot of δ^0 vs. E does not extrapolate to zero at E = 0, but to a value $\delta^0 \sim 4°$ due to the presence of strains in the crystal, which lead to the appearance of birefringence even in the absence of an external field. The results also indicate that the main contribution to the change of the dielectric constant with changing field is made by the transitions between the maximum of the valence band and the minimum of the conduction band. The experimental data deviate appreciably from the theoretical ones at the very edge of the absorption band. The discrepancy is especially pronounced in strong electric fields, and is due to smearing of the edge in such fields and to the appreciable increase of absorption in this energy region. Other causes of the discrepancy are also discussed. Orig. art. has: 2 figures and 4 formulas.

SUB CODE: 20/ SUBM DATE: 27Jul66/ ORIG REF: 001/ OTH REF: 009

Card 2/2 egk

L 27732-66 FBD/EWT(l)/EWT(m)/EEC(k)-2/T/EWP(t)/ETI/EWP(k)/EWA(h) IJP(c)

ACC NR: AP6012467 WG/JD SOURCE CODE: UR/0181/66/008/004/1091/1096

AUTHOR: Alyanovskiy, V. N.; Bagayev, V. S.; Berozashvili, Yu. N.; Vul, B. M. 76 B

ORG: Physics Institute im. P. N. Lebedev, AN SSSR, Moscow (Fizicheskiy institut AN SSSR)

TITLE: Polarization of the emission from gallium arsenide diodes

SOURCE: Fizika tverdogo tela, v. 8, no. 4, 1966, 1091-1096 27 25

TOPIC TAGS: gallium arsenide, semiconductor laser, pn junction, laser emission, light polarization

ABSTRACT: To ascertain the causes of the strong polarization of semiconductor lasers 25 with p-n junctions when the generation threshold is exceeded, the authors investigated the polarization of the laser emission at injection currents above and below threshold, the influence of the orientation of the p-n junction and of the resonator mirrors on the polarization, the emission from individual lasing spots as functions of the injection current, as well as the influence of the temperature. The diodes were obtained by diffusion of Zn in GaAs doped with Te. The injection pulses were short (0.5--5 μsec) and rectangular, with repetition frequency 40--1000 cps. The measurements were made at 77 and 4.2K. Observations were made of the integral-radiation polarization and of the spectral polarization, using polaroid film. Visual observations of the p-n junction were also made through a polarizing microscope. The experiments disclosed no connection between the character of the polarization and the

Card 1/2 2

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orientations of the p-n junction or of the resonator mirrors relative to the crystal axes, or any temperature dependence of the phenomenon. A noticeable polarization of the integral radiation below threshold was observed, with the same orientation as above threshold. At very large currents and in individual cases several modes with different polarization directions were observed at arbitrary orientation of the junction. It is concluded from the results that the polarization direction is sensitive to inhomogeneities present in the crystal and to the presence of anisotropy of the emission or absorption of the medium, due both to the macroscopic lattice distortions and to anisotropy in the velocity distribution of the electrons. Orig. art. has: 5 figures, 8 formulas, and 1 table. [02]

SUB CODE: 20/ SUBM DATE: 16Aug65/ ORIG REF: 003/ OTH REF: 006/ ATD PRESS: 5001

Card 2/2 BLG

BAGAYEV, Yu., inzh.

Device for measuring protective concrete coatings. Radio no.1:33-34 Ja '64. (MIRA 17:8)

MAKAROV, Rostislav Alekseyevich, kand. tekhn. nauk; SHTIPEL'MAN, Il'ya Moiseyevich, inzh.; BAGAYEV, Yuriy Petrovich, st. inzh.; PERFILOV, I.F., inzh., red.

[Electrotensiometer devices in construction] Elektrotenzometricheskie pribory v stroitel'stve. Moskva, Gosstroizdat, 1962. 42 p. (MIRA 16:4)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu. 2. Rukovoditel' laboratorii novykh fizicheskikh metodov issledovaniya Nauchno-issledovatel'skogo instituta stroitel'noy fiziki Akademii stroitel'stva i arkhitektury SSSR (for Makarov). 3. Nachal'nik otdela eksperimental'noy avtomatiki i sredstv izmereniy TSentral'nogo eksperimental'nogo konstruktorskogo byuro "Stroymekhavtomatika" Nauchno-issledovatel'skogo instituta organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu Akademii stroitel'stva i arkhitektury SSSR (for Shtipel'man). 4. Otdel eksperimental'noy avtomatiki i sredstv izmereniy TSentral'nogo eksperimental'nogo konstruktorskogo byuro "Stroymekhavtomatika" Nauchno-issledovatel'skogo instituta organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu Akademii stroitel'stva i arkhitektury SSSR (for Bagayev).

(Tensiometers)

8(3)

AUTHORS: Bagayev, V. S., Vul, B. M., Zherebtsova, A. A., Yuditskiy, S. B.

SOV/105-59-10-4/25

TITLE: Investigation of Large Germanium Rectifiers

PERIODICAL: Elektrichestvo, 1959, Nr 10, pp 21-26 (USSR)

ABSTRACT: This article presents the results of an investigation of large germanium rectifiers of the VG type which were made by the Vsesoyuznyy elektrotekhnicheskiy institut im. Lenina (All-Union Electrotechnical Institute imeni Lenin)(Ref 1). Figure 1 shows the section of a VG-10 rectifier. The dependence of the rectified currents upon voltage and temperature was determined at a temperature maintained constant by means of a thermostat. The saturation current was determined by measuring the direct and backward current at voltages of

$$U \approx \frac{kT}{q}$$

and according to the backward branch of the static characteristics (Ref 4). U denotes the voltage in the p-n transition of the rectifier, T the absolute temperature, k the Boltzmann constant, and q the elementary charge. The backward branch of the static characteristics was plotted at two values of heat emission. The investigation yielded

Card 1/3

the following results: (1) The rectified current I_d exhibits a sufficiently large section on the static characteristics for which formula (1) holds. The deviations from this formula occurring at increased current densities result from the occurrence of the electron component of the rectified current, which in turn leads to an additional voltage drop and additional losses. The temperature coefficient of the rectified current in the experiments is in good agreement with that of calculations. It is about 3% for the group of rectifiers under discussion. (2) The saturation current calculated according to the formula (see Table 3) is somewhat higher than those obtained by experiment. (3) The differential capacity of p-n transitions of the investigated rectifiers is inversely proportional to the square root of the voltage applied. This indicates the gradual character of the p-n transitions. (4) The backward currents increase monotonously with increasing backward voltage. (5) The pulsed breakdown voltages of the individual rectifiers approximately agree with those to be expected from the specific resistance of germanium foils. Formula (11) yields excessively high breakdown voltages if the heating of the rectifier is assumed to be the only reason

for the increase in the backward current. Formula (13) holds for the overheating of the diode when breakdown occurs, which approximately agrees with the experimental results. There are 7 figures, 6 tables, and 7 references, 4 of which are Soviet.

SUBMITTED: May 11, 1959

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AUTHORS: Bagayev, V.S., Zherebtsova, A.A., and Pavlenko, V.A.

TITLE: Capacitance and series resistance of germanium diodes

PERIODICAL: Radiotekhnika i elektronika, v. 6, no. 12, 1961, 2036 - 2040

+

TEXT: The authors measured the capacitance C and series resistance r_s of diodes prepared by fusion and diffusion methods, in order to specify these parameters in the equivalent circuit. The dependence of the parameters on raw material, methods of preparation and geometrical dimensions were studied. Frequencies of measurement were 130 kc, 40 and 1830 mc. At 130 kc C and the equivalent parallel resistance R were measured as functions of reverse voltage by a bridge, type 2T, accurate to 0.2 nF. At 40 mc, a Q-meter was used and at 1830 mc each diode formed the complex load terminating a waveguide. The standing wave ratio and the shift of the standing wave minimum were measured. r_s and C were calculated from the load-

Card 1/4

Capacitance and series resistance ...

short circuit- and open circuit- admittances. The 1830 mc apparatus comprised an audio generator (ЗГ-10) [ZG-10] which synchronized a rectangular pulse generator (ГИП-1) [GIP-1]. The latter modulated the microwave oscillator (ГСС-15) [GSS-15] feeding the line. The signal from the standing wave indicator probe passed through an amplifier (28 ИМ) [28IM] and a synchronized detector with a bandwidth of 1 cycle. The capacitances of all diodes were independent of frequency. Typical values shown in a figure decrease linearly with increasing reverse voltage from 3.5 nF at 1 v to 1 nF at 10 v (fused diodes) and from 16 nF at 0.5 v to 6 nF at 9 v(diffused). The series resistance did not depend upon the reverse voltage and had the same value at 40 and 1830 mc in the cases of fused p^+-n diodes, etched with hydrogen peroxide, and of diffused n^+-p diodes, etched with CP-4 [SR-4]. For diffused diodes, etched with hydrogen peroxide, r_s was 2 to 5 times greater at 40 mc than at 1830 mc. An explanation is offered involving the formation of a superficial inversion layer on the p-side. The following data for 18 diodes prepared in these three ways are tabulated: breakdown voltage, specific resistance of the raw material, area of the p-n junction, thick-